

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as indicated hereafter. It is believed that the following amendments and additions add no new matter to the present application.

In the Specification: [Use ~~strikethrough~~ for deleted matter (or double square brackets “[[]]” if the strikethrough is not easily perceptible, *i.e.*, “4” or a punctuation mark) and underlined for added matter.]

Please amend the paragraph starting on p. 12, line 5 as follows:

As shown in Fig. 1, the exhaust gas purifier relating to the first embodiment [[1]] is equipped with an exhaust gas purifying tank 2 in which engine oil serving as an exhaust gas purifying liquid is stored at the interior, an exhaust gas-introducing pipe 4A which introduces the exhaust gas of a diesel engine or the like into the engine oil, and an exhaust gas cleaner 18 which forms a portion of an exhaust gas guide-out flow path which guides the exhaust gas, which has been purified in the exhaust gas purifying tank 2, out to the outside.

Please amend the paragraph starting on p. 13, line 10 as follows:

As shown in Fig. 1, the exhaust gas-introducing pipe 4A passes through a side wall 2C of the exhaust gas purifying tank 2 in the vicinity of the bottom plate 2A, and extends along the bottom plate 2A. A large number of exhaust gas jetting openings 4D [[4a]], which introduce exhaust gas, are provided in the exhaust gas-introducing pipe 4A along the entire length thereof at the portion thereof which is positioned at the interior of the exhaust gas purifying tank 2.

Please amend the paragraph starting on p. 13, line 18 as follows:

As shown in Fig. 1, a lower plate 22, which keeps the jet of exhaust gas from the exhaust gas jetting openings 4D [[4a]] from directly hitting the bottom plate 2A, is provided in a horizontal direction between the exhaust gas-introducing pipe 4A and the bottom plate 2A in the exhaust gas purifying tank 2. An exhaust mud separating plate 24 is provided horizontally between the lower plate 22 and the bottom plate 2A. A purifying liquid pool 2D, which holds the engine oil which is dirtied by the soot and smoke included in the exhaust gas from the exhaust gas-introducing pipe 4A, is formed between the exhaust gas mud separating plate 24 and the

bottom plate 2A. An opening portion 24A is provided in the central portion of the exhaust mud separating plate 24.

Please amend the paragraph starting on p. 22, line 20 as follows:

Hereinafter, the operation of the exhaust gas purifier of embodiment 1 will be described. The arrows in Fig. 1 show the flow of the exhaust gas in the exhaust gas purifier of the first embodiment [[1]].

Please amend the paragraph starting on p. 22, line 23 as follows:

The exhaust gas, which has been discharged from the diesel engine of a truck or a bus or the like and which has passed through a muffler, passes through the exhaust gas-introducing pipe 4A, and is introduced into the exhaust gas purifying tank 2 from the exhaust gas jetting openings 4D [[4a]].

Please amend the paragraph starting on p. 26, line 1 as follows:

In addition, when the diesel engine runs in a state in which the exhaust gas purifier of the first embodiment [[1]] is connected to the exhaust pipe of the diesel engine, the exhaust noise from the diesel engine can hardly be heard, and only machine noises, such as the noise of gears meshing together or the like, can be heard. Thus, the running noise of the diesel engine is extremely low.

Please amend the paragraph starting on p. 26, line 24 as follows:

As shown in Fig. 3, in the exhaust gas purifier of example 2 as well, the interior of the exhaust gas purifying tank 2 is sectioned into three parts in the vertical direction by the splash-returning plate 20A and the middle plate 20B, in the same way as the exhaust gas purifying tank 2 in the exhaust gas purifier of the first embodiment [[1]]. The exhaust gas purifying liquid such as engine oil or the like is stored in the section of the bottommost level among the three sections in the interior of the exhaust gas purifying tank 2. The portion of the exhaust gas purifying tank 2 in which the exhaust gas purifying liquid is stored corresponds to the first exhaust gas purifying tank in the purifier of exhaust gas relating to the second embodying aspect.

Please amend the paragraph starting on p. 30, line 7 as follows:

In the exhaust gas purifier of the second embodiment [[2]], the exhaust gas of an internal combustion engine such as a diesel engine or the like is, in the same way as in the exhaust gas purifier of the first embodiment [[1]], introduced into the exhaust gas purifying tank 2 from the exhaust gas-introducing pipe 4A. In the exhaust gas purifying tank 2, mainly, the hydrocarbons in the exhaust gas, such as soot and uncombusted fuel and the like, are removed.

Please amend the paragraph starting on p. 30, line 21 as follows:

In addition to the merits of the exhaust gas purifier of the first embodiment [[1]], the exhaust gas purifier of the second embodiment [[2]] has the merit that nitrogen oxides and sulfur oxides in the exhaust gas can be removed even more effectively, and the merit that the outer shape thereof is compact.

Please amend the paragraph starting on p. 31, line 7 as follows:

As shown in Fig. 4, the exhaust gas purifier of the third embodiment [[3]] is equipped with an exhaust gas purifying tank 2, in whose interior is accommodated engine oil which is one example of the exhaust gas purifying liquid, and a nitrogen oxide removing tank 70, which is connected to the exhaust gas purifying tank 2 in series and in whose interior water is accommodated. The exhaust gas purifying tank 2 corresponds to the first exhaust gas purifying tank in the exhaust gas purifier relating to the second embodying aspect of the present invention, and the nitrogen oxide removing tank 70 corresponds to the second exhaust gas purifying tank in the exhaust gas purifier.

Please amend the paragraph starting on p. 32, line 1 as follows:

An inner pulse wave moderating pipe 4B₁, which is a cylindrical member formed by a punch metal plate, covers the portion of the exhaust gas-introducing pipe 4A at which the exhaust gas jetting openings 4D [[4a]] are provided. Further, an outer pulse wave moderating pipe 4B₂, which similarly is a cylindrical member formed by a punch metal plate, is provided concentrically outside of the inner pulse wave moderating pipe 4B₁.

Please amend the paragraph starting on p. 35, line 22 as follows:

In the exhaust gas purifier of the third embodiment [[3]], in the same way as the exhaust gas purifiers of the first embodiment [[1]] and example 2, the exhaust gas from a diesel engine or a gasoline engine or the like is introduced into the exhaust gas purifying tank 2 through the exhaust gas-introducing pipe 4A. The disgorge pressure of the exhaust gas, which is discharged into the exhaust gas purifying tank 2 from the exhaust gas jetting openings 4D [[4a]], is weakened at an inner punch metal cylinder 2b and an outer punch metal cylinder 2c. Thus, the engine oil in the exhaust gas purifying tank 2 little scatter in a mist-form due to the disgorge pressure of the exhaust gas.

Please amend the paragraph starting on p. 37, line 7 as follows:

In the exhaust gas purifier of the third embodiment [[3]], the pulling-out and winding-up of the wound filter 66 at the wound filter containers 66a and 66b can be carried out by the following processes.

Please amend the paragraph starting on p. 38, line 19 as follows:

As shown in Fig. 6, the exhaust gas purifier relating to the fourth embodiment [[4]] has the exhaust gas purifying tank 2 having a vertically-long, rectangular-parallelepiped shape, in which an exhaust gas purifying liquid such as engine oil or the like is accommodated, and an exhaust gas jetting portion 4 extending horizontally in the vicinity of the bottom plate 2A in the interior of the exhaust gas purifying tank 2 and jetting exhaust gas upwardly.

Please amend the paragraph starting on p. 39, line 11 as follows:

As shown in Fig. 6, the exhaust gas jetting portion 4 is equipped with an exhaust gas jetting pipe 4C and an exhaust gas-introducing pipe 4A. The exhaust gas jetting pipe 4C extends in the horizontal direction and its top half portion is semicircular shaped and its bottom half portion has a trapezoidal cross-section. A large number of the exhaust gas jetting openings 4D [[4a]] are formed in the entire surface of the top half portion. The exhaust gas-introducing pipe 4A is provided inside of the exhaust gas jetting pipe 4C in the direction parallel thereto. The

exhaust gas-introducing pipe 4A is a perforated pipe of which entire surface a large number of holes are formed.

Please amend the paragraph starting on p. 39, line 22 as follows:

Auxiliary exhaust gas jetting openings 4E [[4b]], which jet exhaust gas downwardly, are formed in the bottom portion of the exhaust gas jetting pipe 4C as well.

Please amend the paragraph starting on p. 43, line 11 as follows:

The exhaust gas cleaner 18, which further purifies the exhaust gas which has flowed through the interior of the floating sphere filter 16, is provided at the central portion of the ceiling plate 2B of the exhaust gas purifying tank 2. The exhaust gas cleaner 18 has the same structure as described in the section about the exhaust gas purifier relating to the first embodiment [[1]].

Please amend the paragraph starting on p. 44, line 21 as follows:

When exhaust gas from a diesel engine or the like is introduced into the exhaust gas-introducing pipe 4A, the exhaust gas is jetted out from the periphery of the exhaust gas-introducing pipe 4A. The majority thereof rises through the interior of the exhaust gas flow guiding duct 6 from the exhaust gas jetting openings 4D [[4a]] at the exhaust gas jetting pipe 4C, and is guided-out toward the liquid surface of the engine oil at the exhaust gas purifying tank 2 from the exhaust gas guide-out openings 6A. Then, the exhaust gas, which has passed through the engine oil, passes through the floating sphere filter 16 and the exhaust gas cleaner 18, and is discharged to the exterior of the exhaust gas purifier.

Please amend the paragraph starting on p. 46, line 12 as follows:

Here, the exhaust gas purifier shown in Fig. 6 is usually used on a large-sized automobile such as a truck. Thus, at the time of use, the exhaust gas purifier receives vibrations from the road surface, and as described in the section about the exhaust gas purifier relating to the first embodiment [[1]], the floating spheres 14 swing at the interior of the floating sphere filter 16. Accordingly, even if engine oil adheres to the surfaces of the floating spheres 14, the floating spheres 14 do not stick with one another into a single clump. Further, when a large amount of

engine oil adhere on the surfaces of the floating spheres 14, the engine oil drips down from the surfaces of the floating spheres 14, and returns to the exhaust gas purifying tank 2 through the holes in the bottom plate 12A of the floating sphere accommodating chamber 12.

Please amend the paragraph starting on p. 48, line 7 as follows:

Note that the soot adsorbed into the engine oil, for example, accumulates on the bottom plate 6C of the exhaust gas flow-guiding duct 6. However, as shown by arrow b in Fig. 6, a portion of the exhaust gas which is introduced from the exhaust gas-introducing pipe 4A is jetted downwardly toward the bottom plate 6C from the auxiliary exhaust gas jetting openings 4E [[4b]] at the exhaust gas jetting pipe 4C. Thus, the soot accumulating on the bottom plate 6C is blown off by the jetted flow b of exhaust gas.

Please amend the paragraph starting on p. 49, line 4 as follows:

For the above-described reasons, in the exhaust gas purifier relating to embodiment 4, soot within the exhaust gas can be caught up in the engine oil and removed even more efficiently than the exhaust gas purifier relating to the first embodiment [[1]].

Please amend the paragraph starting on p. 49, line 15 as follows:

As shown in Fig. 8, in the exhaust gas purifier relating to the fifth embodiment [[5]], the agitating sphere accommodating chamber 8 is sectioned into the agitating sphere rooms 8A which are small chambers accommodating the agitating spheres 10. The inner walls of the agitating sphere rooms 8A are formed on the whole in configurations contracting toward the top and the bottom, or in other words, are formed in a substantial egg-like or rice grain-like shape.

Please amend the paragraph starting on p. 52, line 14 as follows:

Other than the above-described points, the exhaust gas purifier relating to the fifth embodiment [[5]] has a similar structure as that of the exhaust gas purifier relating to the fourth embodiment [[4]].

Please amend the paragraph starting on p. 52, line 17 as follows:

Further, the exhaust gas purifier relating to the fifth embodiment [[5]] is similar to the exhaust gas purifier relating to the fourth embodiment [[4]] also with regard to the point that, due to the jetted flow of exhaust gas from the exhaust gas jetting portion 4, a circulating flow of engine oil is generated which exits from the exhaust gas guide-out openings 6A of the exhaust gas flow guiding duct 6, and goes around the interior of the exhaust gas purifying tank 2 along the inner walls of the exhaust gas purifying tank 2, and returns into the exhaust gas flow guiding duct 6 through the purifying liquid return openings 6D.

Please amend the paragraph starting on p. 53, line 2 as follows:

In addition to the merits of the exhaust gas purifier relating to the fourth embodiment [[4]], the exhaust gas purifier relating to the fourth embodiment [[4]] also has the merit that, when the output of the engine is low, i.e., even in case when the disgorge pressure of the exhaust gas is low, agitation of the exhaust gas in the agitating sphere accommodating chamber 8 can be carried out reliably.

Please amend the paragraph starting on p. 53, line 17 as follows:

As shown in Fig. 11, in the exhaust gas purifier relating to the sixth embodiment [[6]], a agitating sphere rotating container 80 is formed in a basket shape having a substantially cylindrical shape, and rotates or revolves around a rotating shaft S provided horizontally along the axis of the agitating sphere rotating container 80.

Please amend the paragraph starting on p. 57, line 5 as follows:

The exhaust gas purifier of the sixth embodiment [[6]] has a similar structure as the exhaust gas purifier relating to embodiment 4, except that the agitating sphere accommodating chamber is the agitating sphere rotating container 80, and that the exhaust gas purifier has the pulse wave-returning plates 62.

Please amend the paragraph starting on p. 57, line 10 as follows:

In the exhaust gas purifier of the sixth embodiment [[6]], the exhaust gas is processed while the agitating sphere rotating container 80 is rotated. Thus, while the exhaust gas is being

processed, the agitating spheres 10 roll on the inner wall surfaces of the agitating sphere rotating container 80.

Please amend the paragraph starting on p. 58, line 8 as follows:

Thus, in accordance with the exhaust gas purifier of the sixth embodiment [[6]], soot in exhaust gas can be removed even more completely.

Please amend the paragraph starting on p. 58, line 13 as follows:

An example in which an external circulating flow path circulating the engine oil is provided at the exterior of the exhaust gas purifying tank in the exhaust gas purifier relating to the fourth embodiment [[4]], is shown in Fig. 13. In Fig. 13, reference numerals which are the same as those of Fig. 6 and Fig. 7 denote the same elements as the elements denoted by these reference numerals in Fig. 6 and Fig. 7 unless otherwise noted. Note that, in Fig. 13, the cooling conduits 28 are omitted.

Please amend the paragraph starting on p. 60, line 7 as follows:

As shown in Fig. 13, the exhaust gas purifier of the fourth embodiment has a similar structure to that of the exhaust gas purifier relating to the fourth embodiment [[4]], except for the above-described respective points.

Please amend the paragraph starting on p. 61, line 11 as follows:

Accordingly, in the exhaust gas purifier relating to the seventh embodiment [[7]], a circulating flow, which is even stronger than in the exhaust gas purifier relating to the fourth embodiment [[4]], is generated at the interior of the exhaust gas purifying tank 2. Thus, the soot in the exhaust gas is even more efficiently caught up in the exhaust gas purifying liquid and removed.